

4. Reaction product of:
 - i) about 43% by weight, of methyl methacrylate;
 - ii) about 43% by weight, of butyl acrylate; and
 - iii) about 14% by weight, of acrylic acid.
5. Disodium lauroampho diacetate available ex Rhodia as Miranol® Ultra 32.
6. 80% distilled water, 20% SD-3A alcohol ex J. T. Baker.
7. Sucrose.
8. Glucose.
9. Isomaltose.
10. Didodecyl dimethylammonium chloride.
11. Admixture of C₁₂, C₁₄, and C₁₆ n-alkyl, benzyl dimethyl ammonium chlorides ex Lonza.
12. 1,2-Benzisothiazolin-3-one sold under the name Proxel® GXL ex Zeneca.
13. Sodium tripolyphosphate.
14. Distilled water.

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WHAT IS CLAIMED IS:

1. A system for controlling plant and flower moisture transpiration, said system comprising:
- 5 a) a first component in the form of a solution, said solution applied to the surface of a plant or flower exposed to air, said first component comprising:
- i) a polymer having a water vapor transfer rate of less than 10 g-mm/m²-day and a glass transition temperature, T_g, greater than about 30 °C;
- ii) the balance carriers and adjunct ingredients; wherein said polymer is in the form of a microemulsion having a particle size less than 400 nanometers; and
- 10 b) a second component comprising:
- i) a source of energy for the plant or flower being treated;
- ii) an antimicrobial; wherein said second component is dissolved in water to form a solution and into which solution is placed the plant or flower to be preserved.
- 15 2. A system according to Claim 1 wherein said microemulsion has a particle size less than 200 nanometers.
3. A system according to Claim 2 wherein said microemulsion has a particle size less than 100 nanometers.
- 20 4. A system according to Claim 1 wherein said polymer has a water vapor transfer rate of less than 7 g-mm/m²-day.
5. A system according to Claim 4 wherein said polymer has a water vapor transfer rate of less than 5 g-mm/m²-day.
- 25 6. A system according to Claim 1 wherein said polymer has a glass transition temperature, T_g, greater than about 35 °C.
- 30 7. A system according to Claim 6 wherein said polymer has a glass transition temperature, T_g, greater than about 40 °C.
8. A system according to Claim 1 wherein said first component carrier comprises water and an alcohol selected from the group consisting of methanol, ethanol, isopropanol, n-

propanol, ethylene glycol, propylene glycol, and mixtures thereof; wherein the ratio of water to said alcohol is from about 99:1 to about 1:99.

9. A system according to Claim 1 wherein said first component adjunct ingredients are selected from the group consisting of fragrance raw materials, pro-fragrances, pro-acords, dye, colorants, and mixtures thereof.
- 5 10. A system according to Claim 1 wherein said second component source of energy is selected from the group consisting of one or more carbohydrates, plant or flower digestible polysaccharides, and mixtures thereof.
- 10 11. A system according to Claim 1 wherein said antimicrobial has the formula:

$$\left[\begin{array}{c} R^2 \\ | \\ R^1 - N^+ - R^3 \\ | \\ R^4 \end{array} \right] X^-$$
- 15 wherein R¹ and R² are each independently C₈-C₂₀ linear or branched alkyl, benzyl, and mixtures thereof; R³ and R⁴ are each independently C₁-C₄ alkyl, and mixtures thereof; X is an anion of sufficient charge to provide electronic neutrality.
- 20 12. A system according to Claim 11 wherein R¹ and R² are each C₁₂ alkyl; R³ and R⁴ are each methyl; X is chlorine.
13. A system according to Claim 1 wherein said second component further comprises a calcium ion sequestrant.
- 25 14. A system for controlling plant and flower moisture transpiration, said system comprising:
 - a) a first component in the form of a solution, said solution applied to the surface of a plant or flower exposed to air, said first component comprising:
 - i) from about 0.01% to about 20% by weight, of a polymer such that the water vapor transfer rate and glass transition temperature, T_g, of said polymer define a point to the left of a line having the equation:
- 30

$$y = -0.068443x + 10$$

wherein the ordinate, x, is the glass transition temperature and the abscissa, y, is the water vapor transfer rate of said polymer;

- ii) the balance carriers and adjunct ingredients; and

- b) a second component comprising:

- i) a source of energy for the plant or flower being treated;

- ii) an antimicrobial;

wherein said second component is dissolved in water to form a solution and into which solution is placed the plant or flower to be preserved.

10 15. A system according to Claim 14 wherein said polymer comprises the reaction products of mono-carboxylic acids and the esters, amides, and anhydrides thereof comprising one olefin moiety.

15 16. A system according to Claim 15 wherein said mono-carboxylic acids are selected from the group consisting of acrylic acid, methacrylic acid, crotonic acid, and mixtures thereof.

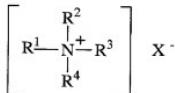
20 17. A system according to Claim 14 wherein said esters of mono-carboxylic acids are selected from the group consisting of n-propyl methacrylate, n-butyl methacrylate, methyl methacrylate, n-butyl acrylate, 2-(N,N-dimethylamino)ethyl methacrylate, and mixtures thereof.

25 18. A system according to Claim 14 wherein said polymer comprises the reaction products of mono-carboxylic acids and the esters, amides, and anhydrides thereof comprising one olefin moiety, polycarboxylic acids and the esters, amides, and anhydrides thereof comprising one olefin moiety.

30 19. A system according to Claim 18 wherein said polycarboxylic acids are selected from the group consisting of oxalic acid, succinic acid, tartaric acid, itaconic acid, maleic acid, and mixtures thereof; and the esters, amides, and anhydrides thereof.

20. A system according to Claim 14 wherein said solution of said polymer of component one forms a microemulsion having a particle size less than 400 nanometers.

21. A system according to Claim 20 wherein said solution of said polymer of component one forms a microemulsion having a particle size less than 200 nanometers.
- 5 22. A system according to Claim 21 wherein said solution of said polymer of component one forms a microemulsion having a particle size less than 100 nanometers.
- 10 23. A system according to Claim 14 wherein said first component carrier comprises water and an alcohol selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, ethylene glycol, propylene glycol, and mixtures thereof; wherein the ratio of water to said alcohol is from about 99:1 to about 1:99.
- 15 24. A system according to Claim 14 wherein said first component adjunct ingredients are selected from the group consisting of fragrance raw materials, pro-fragrances, pro-accords, dye, colorants, and mixtures thereof.
- 20 25. A system according to Claim 14 wherein said second component source of energy is selected from the group consisting of one or more carbohydrates, plant or flower digestible polysaccharides, and mixtures thereof.
26. A system according to Claim 14 wherein said antimicrobial has the formula:



wherein R¹ and R² are each independently C₈-C₂₀ linear or branched alkyl, benzyl, and mixtures thereof; R³ and R⁴ are each independently C₁-C₄ alkyl, and mixtures thereof; X is an anion of sufficient charge to provide electronic neutrality.

- 25 27. A system according to Claim 26 wherein R¹ and R² are each C₁₂ alkyl; R³ and R⁴ are each methyl; X is chlorine.
- 30 28. A system according to Claim 14 wherein said second component further comprises a calcium ion sequestrant.